Summary of JSC 27472 Rev A:
"Requirements for Submission of Data Needed for Toxicological Assessment of Chemicals and Biologicals to be Flown on Manned Spacecraft"
revised March 1999

Data on chemical and biological materials to be flown in the pressurized volumes of habitable spacecraft, including the International Space Station (ISS), are needed by JSC toxicologists to assess the toxicity and assign hazard levels. This document defines submission schedules and establishes requirements for the types and format of these data. JSC 27472 Rev A is a major revision of JSC 25607, "Requirements for Submission of Test Sample-Materials Data for Shuttle Payload Safety Evaluations", dated October 1994, which was subsequently re-issued (September 1996) with a new document number, JSC 27472, but with the same title and date and no revisions. The revisions in the present document have been necessitated by the recent introduction of a two-step process (described in this document) for verification of data for flight materials and by the anticipated needs of the ISS.

The requirements for data submission apply to items which contain liquids, gases, gels, greases, powders/ particulates, radioisotopes, or biological materials and are located in the habitable pressurized volume of ISS or U.S. operated spacecraft. These include, but are not limited to, science payloads, government furnished equipment (GFE), risk mitigation experiments (RMEs), development test objectives (DTOs), detailed supplementary objectives (DSOs), life science experiments, and medical studies.

Summary of JSC 26895:
"Guidelines for Assessing the Toxic Hazard for Spacecraft Chemicals and Test Materials"
revised October 1997

This document describes the criteria and procedural guidelines used by the NASA/JSC Toxicology Group (JSC-TG) to perform toxicological evaluations. The JSC-TG is responsible for conducting toxicological assessments and assigning toxic hazard levels for essentially all chemicals and biological materials that are used or transported in the habitable areas of U.S. spacecraft, including chemicals and biologicals carried by the Space Shuttle to and from the International Space Station (ISS). Hazard assessments for microorganisms used in payload experiments are performed by the JSC Microbiology Laboratory at the request of the JSC-TG. Radioactive materials are assessed by the JSC Radioisotope Working Group for radiation risk; the flammability rating on flammable materials is assessed by the Nonmetallic Materials Branch. This document focuses on the assessment of chemically-induced toxicity hazards. Toxic hazard levels and their color codes are defined and procedures are described for assessing various classes of materials. The toxicological assessments, together with assessments on radioactive, microbiological, and flammability hazards, are incorporated into a mission-specific Hazardous Materials Summary Table (HMST).

Summary of JSC 20584:
"Spacecraft Maximum Allowable Concentrations for Airborne Contaminants"
revised June 1999

This document consists of a table which lists the current official Spacecraft Maximum Allowable Concentration (SMAC) values for 54 potential airborne contaminants in U.S. manned spacecraft. The table includes the chemical name, synonyms, effects of exposure, target organs, and exposure guidelines for durations of 1 hour, 24 hours, 7 days, 30 days and 180 days.